

II. CHANDLER HEIGHTS CITRUS IRRIGATION DISTRICT

Chandler Heights Citrus Irrigation District (CHCID) was organized in 1929 and is located in Maricopa County, about 10 miles southwest of Chandler as shown on Figure L-NIA-4. The CHCID has approximately 23 miles of underground pipeline.

Of the 1,290 acres in the District, approximately 1,250 are irrigated primarily for citrus, some grapes, and a little pasture. Well pumpage is measured in gallons per minute and farmers are charged by the af. This charge is currently \$45. Deliveries are made on the basis of request and availability of water. From June 30, 1994 to June 30, 1995, 4,200 af of water were distributed within the district for irrigation. During the same period, approximately 37 million gallons of water were served to more than 250 domestic connections. A property tax of \$50 per acre was assessed in 1995.

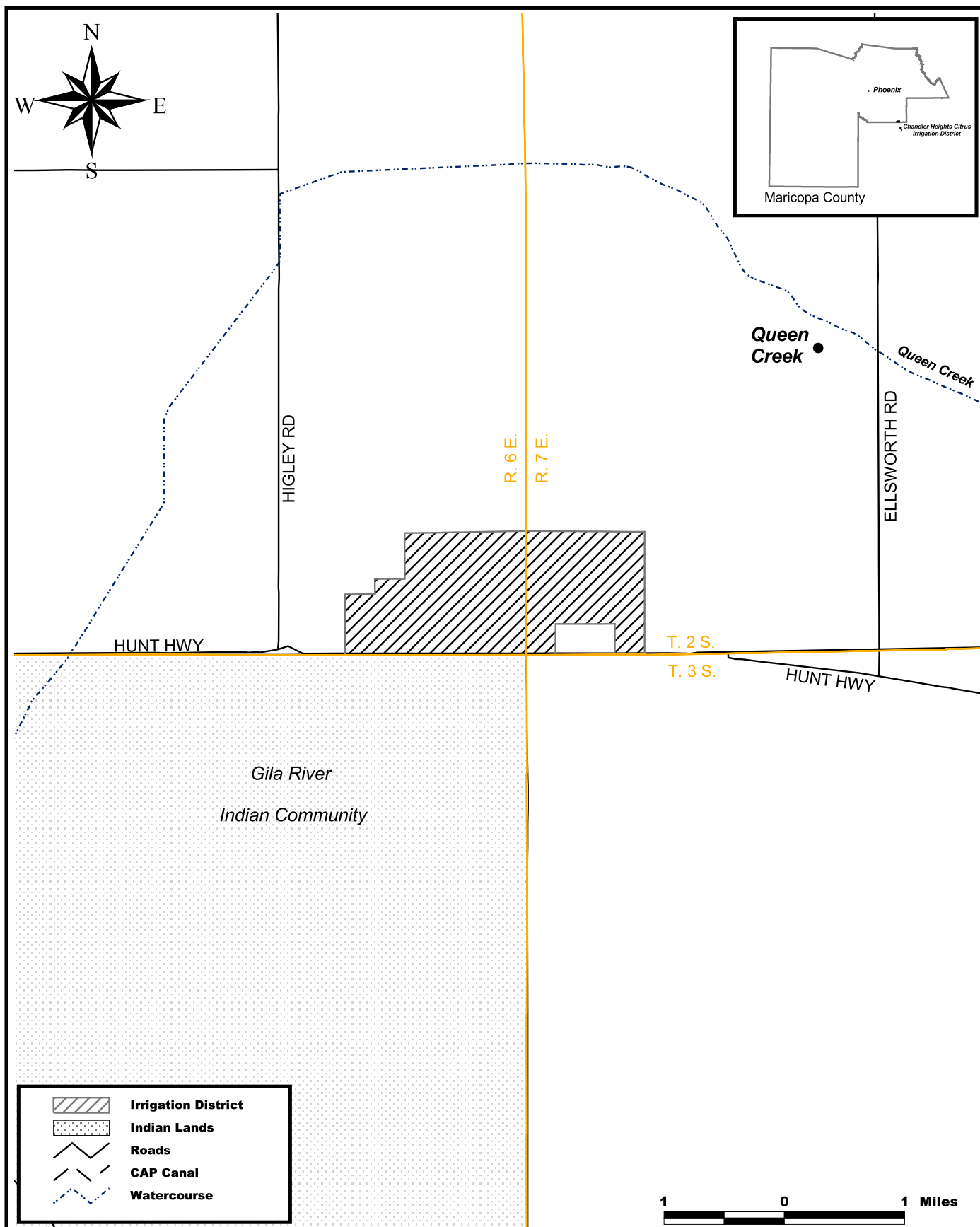
CHCID delivered a total of 3,686 af of water in 1998. Of that total, 1,784 af, or 48 percent, was from groundwater, and 1,902 af, or 52 percent, was from CAP.

II.A. CAP Water Allocation History

The CHCID entered into a contract with the United States and CAWCD for 0.28 percent of the available NIA pool, effective October 1, 1993. Had the 1992 NIA reallocation process been completed, CHCID's percentage of the available NIA pool would have increased to 0.3. In late 1993, CHCID entered into a two-party letter agreement with CAWCD under which CHCID and CAWCD "mutually agreed to waive certain rights and obligations under the Water Service Subcontract." The United States is challenging these agreements in ongoing litigation regarding operation of the CAP. Nevertheless, CHCID has contracted for CAP water pursuant to this agreement from the Ag Pools on an annual basis and at a rate reduced from the original contract requirements.

Under the Settlement Alternative, CHCID would voluntarily relinquish its allocation of CAP water in exchange primarily for debt relief and access to affordably priced CAP Ag Pool water for the next 30 years (see Chapter II for full description of all alternatives). Under Non-Settlement Alternative 3A, CHCID would be offered and would accept an allocation of the available NIA CAP water supply. For purposes of analysis only, this percentage amount has been converted to 173 afa. That CAP water would be delivered for a 50-year contract period (i.e., from 2001-2051) on an as-available basis, with less water anticipated as being available later in time. The CAP water would be used to supplement water supply demands over the next 50 years and would help reduce the continuing dependence on pumping groundwater from an overdrafted groundwater system. Under all the other alternatives, CHCID would not receive an additional allocation. It should be noted that, even without an allocation, CAP water will continue to be available to CHCID from the Ag Pool, which is comprised of excess water. Under the Settlement Alternative, CHCID would receive 0.14 percent of the Ag Pool. Under all other alternatives, CHCID would receive 0.5 percent of the Ag Pool.

Table L-NIA-7 outlines the proposed CAP allocation by alternative.



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CAP Allocation Draft EIS **General Location Map** **Chandler Heights Citrus Irrigation District**

Figure #L-NIA-4

| Table L-NIA-7 CAP Allocation DEIS CHCID – Proposed Additional CAP Allocation | | |
|---|---|-----------------|
| Alternative | Additional Allocation^a (in afa) | Priority |
| Settlement Alternative | 0 | - |
| No Action | 0 | - |
| Non-Settlement Alternative 1 | 0 | - |
| Non-Settlement Alternative 2 | 0 | - |
| Non-Settlement Alternative 3A | 173 ^b | NIA |
| Non-Settlement Alternative 3B | 0 | - |
| Existing CAP Allocation | 1,114 ^c | NIA |
| Notes: ^a All NIA allocations are percentages of the available NIA CAP water supply. They are converted to fixed af amounts only for ease of calculation in the draft EIS. See Appendix B for the calculation of NIA allocation numbers. ^b This allocation is CHCID's calculated percentage from the uncontracted NIA pool. ^c Based on 0.28 percent of the available NIA CAP water supply. The status of this allocation is in dispute. | | |

II.B. Water Demand and Supply Quantities

CHCID contains 542 CAP-eligible acres and 67 acres of CAP excess land. No new net acreage can be brought into production as a result of the 1980 GMA. Currently, CHCID uses approximately 1,786 afa of CAP water, of which 53 afa are provided as in-lieu groundwater recharge. Additionally, CHCID pumps 12,215 afa of groundwater. This water use pattern is based on a five-year average from 1998 to 1994. This water use pattern could change if acreage is taken out of production due to economic reasons or urbanization. Reductions in total water use reflect reductions in farmed acres due to water costs or the lack of access to CAP water.

In order to estimate impacts for the next 50 years, assumptions were made regarding the availability and pricing of CAP water for each alternative. These assumptions are fully described in Appendix A, Background Assumptions. Using the CAP water availability as a base, a model was developed (as described in Appendix D, Socioeconomic Analysis) to project water use and the number of cropped acres based on economic decisions.

CHCID was excluded in the economic analysis because predominantly high-value crops (i.e., citrus) are cultivated that are not sensitive to the range of water prices examined in this study. Acreage was also decreased based on urbanization due to population growth.

II.C. Specific Construction-Related Impacts

No new water delivery facilities would be required with one exception. Under the Settlement Alternative, RRA restrictions may be lifted and CHCID may desire to build new facilities to deliver CAP water to previously ineligible lands. This possibility is considered speculative at this time and is beyond the scope of this EIS.

II.D. Environmental Effects

Since construction of water delivery facilities would not likely be required, the primary environmental impacts to CHCID would result from the availability of CAP water and its cost, under the different alternatives.

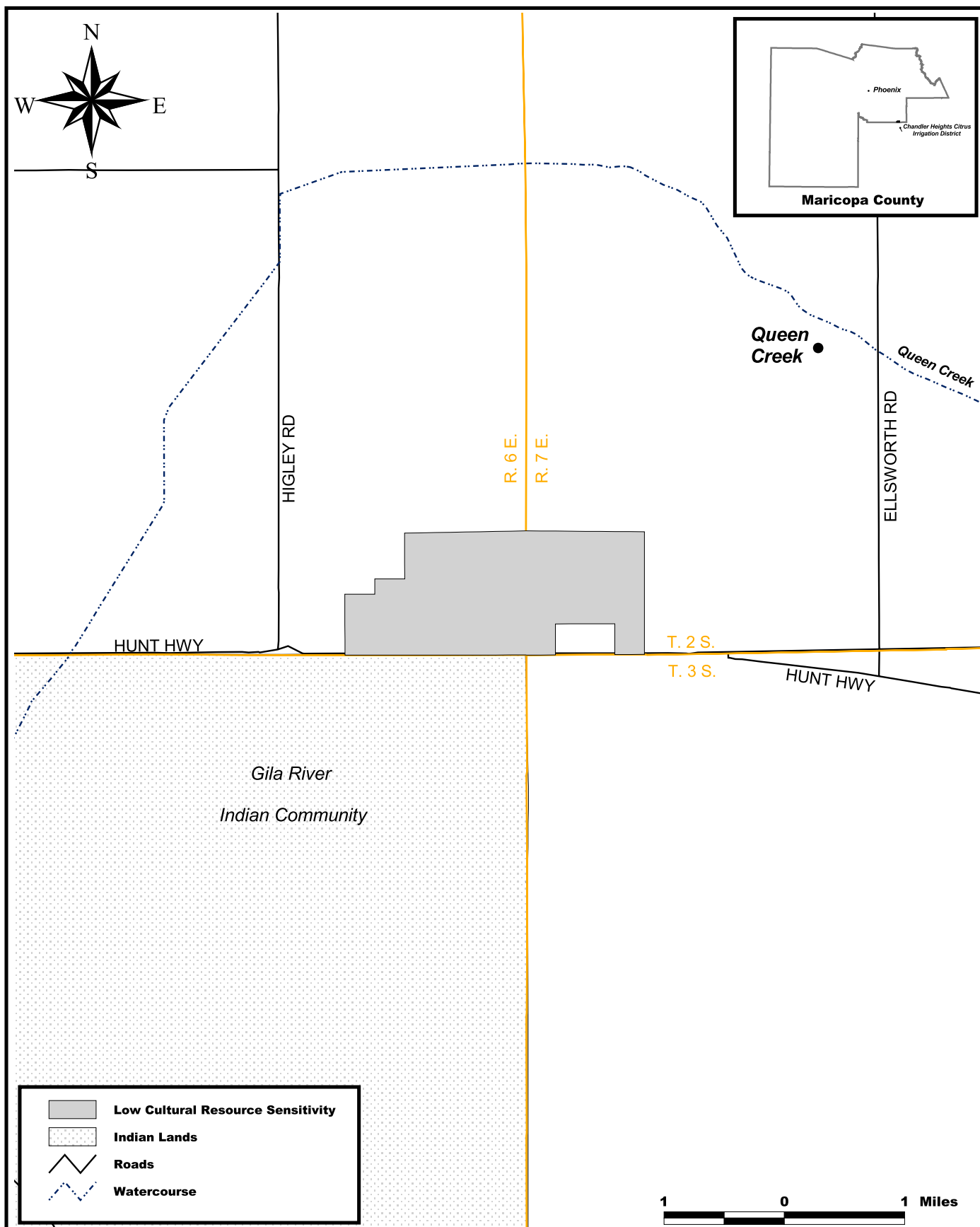
II.D.1. Land Use

Table L-NIA-8 shows the land use pattern for years 2001 to 2051 within the CHCID area. No acreage is projected to be retired and fallowed, but the entire district is projected to be urbanized by 2030.

| Table L-NIA-8 CAP Allocation DEIS CHCID – Projected Agricultural Land Use (Acres) | | | | |
|--|-------------|--------------------|---|--|
| Alternative | Year | Land Farmed | Land Urbanized Per Time Step | Land Fallowed Due to Economic Reasons per Time Step |
| Settlement Alternative | 2001 | 1,406 | 0 | 0 |
| | 2004 | 1,122 | 284 | 0 |
| | 2017 | 848 | 274 | 0 |
| | 2030 | 89 | 759 | 0 |
| | 2043 | 0 | 89 | 0 |
| | 2051 | 0 | 0 | 0 |
| No Action | 2001 | 1,406 | 0 | 0 |
| | 2004 | 1,122 | 284 | 0 |
| | 2017 | 848 | 274 | 0 |
| | 2030 | 89 | 759 | 0 |
| | 2043 | 0 | 89 | 0 |
| | 2051 | 0 | 0 | 0 |
| Non-Settlement Alternative 1 | 2001 | 1,406 | 0 | 0 |
| | 2004 | 1,122 | 284 | 0 |
| | 2017 | 848 | 274 | 0 |
| | 2030 | 89 | 759 | 0 |
| | 2043 | 0 | 89 | 0 |
| | 2051 | 0 | 0 | 0 |
| Non-Settlement Alternative 2 | 2001 | 1,406 | 0 | 0 |
| | 2004 | 1,122 | 284 | 0 |
| | 2017 | 848 | 274 | 0 |
| | 2030 | 89 | 759 | 0 |
| | 2043 | 0 | 89 | 0 |
| | 2051 | 0 | 0 | 0 |
| Non-Settlement Alternative 3A | 2001 | 1,406 | 0 | 0 |
| | 2004 | 1,122 | 284 | 0 |
| | 2017 | 848 | 274 | 0 |
| | 2030 | 89 | 759 | 0 |
| | 2043 | 0 | 89 | 0 |
| | 2051 | 0 | 0 | 0 |
| Non-Settlement Alternative 3B | 2001 | 1,406 | 0 | 0 |
| | 2004 | 1,122 | 284 | 0 |
| | 2017 | 848 | 274 | 0 |
| | 2030 | 89 | 759 | 0 |
| | 2043 | 0 | 89 | 0 |
| | 2051 | 0 | 0 | 0 |

II.D.2. Archaeological Resources

Only one archaeological survey has taken place, and no previously recorded sites are located within this entity. Although herein classified as an area of low cultural resource sensitivity, it is



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Cultural Resources
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Figure #L-NIA-5

worth noting that archaeological sites are known to be present in the surrounding areas. Pozos de Sonoqui, a major Hohokam village complex with a ball court and platform mound, is located to the east, suggesting the possibility of additional associated cultural deposits—such as artifact scatters, isolated features, and agricultural fields—within the entity’s boundaries. Protohistoric and/or historic Pima and Pi-Posh remains also might be present. It is not known whether this entity has a local historic preservation program. Cultural resource sensitivity areas in this entity are shown in Figure L-NIA-5. Based on the limited data used to generate the cultural sensitivity designations, the potential for cultural resource impacts in this entity is low. Urbanization of farmlands could impact any intact cultural deposits that might be preserved below the plow zone. Mitigation for these potential impacts would be determined by local jurisdictions. No impacts to cultural resources are expected from land fallowing.

II.D.3. Biological Resources

Table L-NIA-8 shows land use over the period of study by alternative. Land either stays in agricultural production or is converted to urban uses. When conversion of agricultural lands to urban use occurs, loss of natural habitat or wildlife is minimal. However, adjacent lands may contain wildlife that might be impacted, such as burrowing owls, nests of local birds, and habitat for small mammals.

II.D.4. Water Resources

CHCID has met historical irrigation demands using groundwater, supplemented in later years with CAP water. Groundwater levels have declined historically in response to the groundwater pumping, and a groundwater level depression is located in the general vicinity of CHCID. The TDS concentration of groundwater ranges generally from about 500 to 1,000 ppm. This area has experienced subsidence historically, due to the groundwater level declines.

Presented in Table L-NIA-9 are estimated changes in groundwater levels from 2001 to 2051 and estimated groundwater level impacts for each alternative. Under the No Action Alternative, groundwater levels rise by about 44 feet through about 2051. This rise in groundwater levels reflects the interplay of a number of factors, including urbanization and changes in irrigated acreage in QCID (located adjacent to CHCID) due to economic considerations. The rise in groundwater levels would likely cause a reduction in pumping costs. The rise in groundwater levels would tend to eliminate subsidence. Also, the groundwater level rise in this area would eliminate the current local groundwater depression, which would tend to improve groundwater quality.

Groundwater levels in year 2051 under the Settlement Alternative and all Non-Settlement Alternatives would be lower than under the No Action Alternative, except for Alternative 1. As with the No Action Alternative, these groundwater levels reflect a number of different factors, including urbanization and changes in irrigated acres in the adjacent QCID due to economic considerations. There would be the potential for subsidence under the Settlement Alternative and Non-Settlement Alternatives 2 and 3A, due to the lower groundwater levels. There would also be the potential for adverse groundwater quality impacts under the Settlement Alternative, as a groundwater level depression would remain in the vicinity of CHCID.

| Table L-NIA-9 CAP Allocation Draft EIS CHCID – Groundwater Data Table | | |
|--|--|---|
| Alternative | CHCID* | |
| | Estimated Groundwater Level Change from 2001-2051 (in feet) | Groundwater Level Impact** (in feet) |
| No Action | 44 | -- |
| Settlement Alternative | -18 | -62 |
| Non-Settlement Alternative 1 | 53 | +8 |
| Non-Settlement Alternative 2 | -31 | -75 |
| Non-Settlement Alternative 3A | -27 | -71 |
| Non-Settlement Alternative 3B | 1 | -44 |
| * Values correspond to the QCID sub-area. ** Computed by subtracting the estimated groundwater decline from 2001 to 2051 for the No Action Alternative from the estimated change in groundwater level for the same period for the alternative under consideration. The estimated impact is considered to be more accurate than the estimated decline in groundwater levels. | | |

II.D.5. Socioeconomic

CHCID was excluded in the economic analysis because predominantly high-value crops are cultivated in CHCID that are not sensitive to the range of water prices examined in this study.

No crop acreage is projected to go out of production due to increases in water price. Therefore, no socioeconomic impacts associated with the CAP reallocation strategies in this EIS were analyzed for this irrigation district.